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BIOMETRICS BASED VIRTUAL ROBOT USING IOT

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ABSTRACT

Person-to-person contact during the epidemic was very dangerous for the specialist, medical staff, and patient. In each area, specialists are often expected to be present in medical clinics and crisis centres. Therefore, it is impossible for me to attend every single one and to be available at every location at the desired time. A Virtual Doctor system that enables an expert to essentially roam about any clinic space and have spoken conversation with patients helps with this problem. Such robots are used in healthcare settings to ensure assistance and to reduce individual-to-individual interaction. This may be accomplished by reducing the danger that the pandemic poses to clinical staff members and many other individuals who hold operational positions within the company. For professionals, this method has a number of benefits, including: In activity theatres, doctors will walk around. Various rooms will be visited by specialists RF based robot control system. The professional will control the mechanism using an IOT-based board. The mechanism controller receives the management orders given online. The device's Wi-Fi controller controls it.

Keywords: Internet of Things (IoT), Robot control system and biometric sensor

1. INTRODUCTION

The internet of things (IoT) offers the quantifiability needed for continuous and accurate global health observation for this purpose. As time goes on, this paradigm will become an important technology in tending. Additionally, the way of observing and identifying health issues has been completely transformed by recent advancements in low power consumption, miniaturization, and biosensors. Virtual specialized mechanical framework enters it via this development for clinical care and individual therapy. It goes without saying that specialists sometimes appear in medical clinics and crisis centres. However, it is not feasible for every professional to be present at every location at the desired time. The challenge with video calling is that it must be done from a laptop or laptop stationed elsewhere. This limits the specialist's capacity to assess patients, walk between emergency clinic rooms, or even wager on items when

2. LITERATURE SURVEY

[1] Divya Ganesh "AutoImpilo: Smart Automated Health Machine using IoT to Improve Telemedicine and Telehealth", 2021. The purpose of the paper, according to Divya Ganesh, [1] is to create an automated system that can quickly link to healthcare providers like hospitals or physicians in order to stop the spread of illness and lower the rising rates of death in rural regions.

[2] During the COVID-19 Outbreak, "An IoT-Based Healthcare Platform for Patients in ICU Beds," Itamir De Morais Barroca Jr. IoT appears as a promising paradigm because it offers the scalability necessary for this objective, facilitating ongoing and accurate global health monitoring. Based on this backdrop, the authors' earlier studies suggested an IoT-based

healthcare platform to provide remote monitoring for patients in a life-threatening condition.

[3] "An IoT-based system for automated health monitoring and surveillance in post pandemic life is called COVIDSAFE Invoking" - Seyed Shahim Vedaei the Internet of Things (IoT) may assist in providing a remote diagnosis before reaching hospitals for more effective treatment in a smart healthcare system. Develop an Internet of Things (IoT) e-health system based on Wireless Sensor Networks to continually monitor patients' state of health for diabetic patients. Blood glucose data may be transferred through wearable sensors to physicians or cellphones (WSN).

[4] Kashif Hameed, "An Intelligent IoT Based Healthcare System Using Fuzzy Neural Networks," The term "remote delivery of healthcare services" refers to telemedicine. Telemedicine provides a lot of advantages, but it also has some drawbacks. Both providers and payers as well as regulators are aware that there are certain murky regions that are difficult to monitor. Over the next ten years, the sector will expand rapidly, but it will also provide both practical and technical hurdles.

[5] "Remote Health Monitoring System for Patients and Elderly People Using Internet of Things," Mohd. Hamim IoT integration with health wearables may eliminate the need for patients to visit hospitals for basic health concerns. Additionally, patients' medical costs are much lower as a result of this. Additionally, by tracking a patient's health statistics over time through an application, physicians may prescribe appropriate drugs. To comprehend how the employed sensors, operate, a thorough study of the data was collected with regard to fluctuations in physical and environmental activity.

3. EXISTING SYSTEM

This idea might provide older citizens living independently with a robot-assisted intelligent emergency system. Through a robot-sensing element system, it serves as an innovative senior freelancing living emergency assistance platform. the robot-assisted emergency system in brief Wearable sensors and emergency aid capabilities will be required. Motion sensors are often used to keep an eye on all of the senior citizen's activities. Emergency situations, such as falling to the ground, will be seen in advance. It will automatically certify that the incident is a falling accident rather than someone sitting on a sofa or sleeping on a bed since the acceleration rate of the person's postures exceeds a certain threshold, etc. We tend to successfully integrate the wearable device and mechanism together, resulting in a smooth hardware/software system integration. The wearable gadget is wirelessly (through Bluetooth or Wi-Fi) linked to the mechanism. When a wearable gadget triggers an alert, the mechanism may take a number of steps. For example, it may automatically choose a relative who will remotely tele-control the mechanism through video communication in order to investigate the situation and take appropriate action. In this instance, we will reduce the warning rate that restricts the efficacy of several remedies. In the event that a response is not obtained from the mechanism, the wearable gadget may also convey a warning to family members or physicians.

4. PROPOSED SYSTEM

The proposed system for project's main objective is to effectively provide medical care to the underprivileged in mobile regions of the state. The main goal is to use less staff to care for the patients. People who reside in rural or mobile locations lack the option to get medical care from a doctor who practices in a city. The RF transmitter used for robot forward and reverse controlling purpose. Then finger print biometric sensor used patient details identify and web camera used patient image capture the send to information details for doctor via IOT. However, it is impossible for every doctor to be available at all times or in all locations. With video business, it's necessary to do video calls from a laptop or laptop computer on a table. This restricts the doctor's ability to observe the patient, walk about the operating area, or maybe travel among the hospital rooms on a PRN basis. To assist in resolving this problem, we have created a virtual doctor automaton that enables a physician to virtually roam around in a distant country and even sit down with patients there as needed. For physicians, this automaton has a tone of advantages, including.

5. SYSTEM SPICIFICATION:

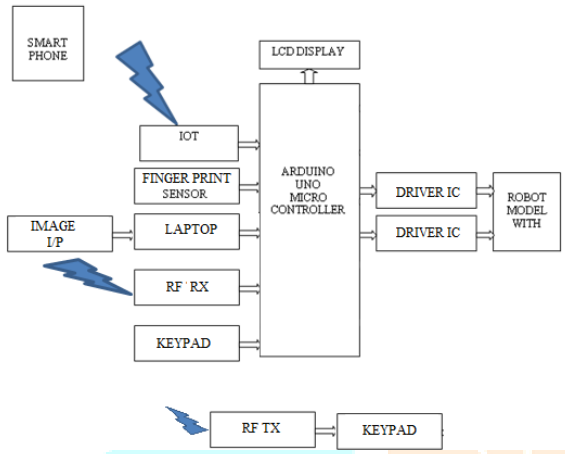
5.1 HARDWARE REQUIREMENT

Arduino Uno Microcontroller
LCD Display
Finger Print Sensor
Web Camera
Wi-Fi
L298 Driver Circuit
DC Motor
RF Transmitter and Receiver
Robot Model

5.2 SOFTWARE REQUIREMENT

PCB Designing
Arduino Ide
Android Studio

6. BLOCK DIAGRAM



7. INTERNET OF THINGS (IOT)

The Internet of things (IoT) is the network of physical devices, vehicles, home appliances, and other items embedded with electronics, software, sensors, actuators, and connectivity which enables these things to connect, collect and exchange data. IoT involves extending Internet connectivity beyond standard devices, such as desktops, laptops, smartphones and tablets, to any range of traditionally *dumb* or non-internet-enabled physical devices and everyday objects. Embedded with technology, these devices can communicate and interact over the Internet, and they can be remotely monitored and controlled. With the arrival of driverless vehicles, a branch of IoT, i.e. the Internet of Vehicle starts to gain more attention. The definition of the Internet of things has evolved due to convergence of multiple technologies, real-time analytics, machine learning, commodity sensors, and embedded systems. Traditional fields of embedded systems, wireless sensor networks, control systems, automation (including home and building automation), and others all contribute to enabling the Internet of things.

The concept of a network of smart devices was discussed as early as 1982, with a modified Coke machine at Carnegie Mellon University becoming the first Internet-connected appliance, able to report its inventory and whether newly loaded drinks were cold. Mark Weiser's 1991 paper on ubiquitous computing, "The Computer of the 21st Century", as well as academic venues such as UbiComp and PerCom produced the contemporary vision of IoT. In 1994, Reza Raji described the concept in *IEEE Spectrum* as "[moving] small packets of data to a large set of nodes, so as to integrate and automate everything from home appliances to entire factories". Between 1993 and 1997, several companies proposed solutions like Microsoft's at Work or Novell's NEST. The field gained momentum when Bill Joy envisioned Device to Device (D2D) communication as part of his "Six Webs" framework, presented at the World Economic Forum at Davos in 1999.

The term "Internet of things" was likely coined by Kevin Ashton of Procter & Gamble, later MIT's Auto-ID Center, in 1999, though he prefers the phrase "Internet *for* things". At that point, he viewed Radio-frequency identification (RFID) as essential to the Internet of things, which would allow computers to manage all individual things.

A research article mentioning the Internet of things was submitted to the conference for Nordic Researchers in Logistics, Norway, in June 2002, which was preceded by an article published in Finnish in January 2002.The implementation described there was developed by Kary Främling and his team at Helsinki University of Technology and more closely matches the modern one, i.e. an information system infrastructure for implementing smart, connected objects.

Defining the Internet of things as "simply the point in time when more 'things or objects' were connected to the Internet than people", Cisco Systems estimated that IoT was "born" between 2008 and 2009, with the things/people ratio growing from 0.08 in 2003 to 1.84 in 2010.

8. PYTHON

Python is a high-level, interpreted scripting language developed in the late 1980s by Guido van Rossum at the National Research Institute for Mathematics and Computer Science in the Netherlands. The initial version was published at the alt. sources newsgroup in 1991, and version 1.0 was

released in 1994. Python 2.0 was released in 2000, and the 2.x versions were the prevalent releases until December 2008. At that time, the development team made the decision to release version 3.0, which contained a few relatively small but significant changes that were not backward compatible with the 2.x versions. Python 2 and 3 are very similar, and some features of Python 3 have been backported to Python 2. But in general, they remain not quite compatible.

Both Python 2 and 3 have continued to be maintained and developed, with periodic release updates for both. As of this writing, the most recent versions available are 2.7.15 and 3.6.5. However, an official End of Life date of January 1, 2020 has been established for Python 2, after which time it will no longer be maintained. If you are a newcomer to Python, it is recommended that you focus on Python 3, as this tutorial will do. Python is still maintained by a core development team at the Institute, and Guido is still in charge, having been given the title of BDFL (Benevolent Dictator for Life) by the Python community. The name Python, by the way, derives not from the snake, but from the British comedy troupe Monty Python's Flying Circus, of which Guido was, and presumably still is, a fan. It is common to find references to Monty Python sketches and movies scattered throughout the Python documentation.

9. CONCLUSION

The mechanism technology used in this project helps to ensure peoples' safety and security. This efficient process is crucial in providing older citizens with emergency assistance, not only for patients and physicians. It has a positive effect on society, thus the bio-medical and natural philosophy may have a big influence on the health industry. The lives of people are dynamic every day, and they depend on technical advancements to help them solve their difficulties. Artificial intelligence in healthcare enables high-quality, cost-effective patient care. Each patient, patient, and doctor are in a clinical atmosphere that is secure.

10. REFERENCE

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